REMARKS

With the exception of alternative wording of the last phrase of claim 22 the amendments presented herein are identical to the amendment filed after Final rejection on June 25, 2004. The Advisory Action dated September 2, 2004 indicates that the amendment filed June 25, 2004 has not been entered. Thus, this amendment modifies the claims that were pending prior to the Final Rejection. Applicants appreciate the indication in the Advisory Action that the amendment filed June 25, 2004 "would overcome all previous grounds of rejection." For clarity of the record Applicants have re-submitted both the amendments and the arguments from the June 25, 2004 response.

I. Status of the Claims

Claims 22, 23, 25, 26, 28, 29, 33-37, 39, 47 and 48 were pending and under examination at the time of the Office Action dated April 6, 2004. Claims 28, 47 and 48 have been canceled by way of amendment above. Thus, claims 22, 23, 25, 26, 29, 33-37 and 39 are pending and under examination.

Applicants respectfully note that the limitations of claim 28 have been incorporated into claim 22. Claim 28 was not included in any of the rejections discussed in the Office Action. However, the Office Action Summary listed claim 28 among the rejected claims. If claim 28 was not included in any of the rejections, then incorporation of the limitations of claim 28 into claim 22 should render claim 22 allowable.

Clarification of the status of claim 28 at the time of the Office Action dated April 6, 2004, is respectfully requested.

II. Amendments to the Claims

Claim 22 has been amended above to incorporate the nucleotide sequence encoding the ICYP receptor, and the hybridization conditions recited in claims 28 and 47. Consequently, claims 28 and 47 have been canceled, in addition to dependent claim 48. The preparation of the ICYP receptor by means of hybridization using the ICYP receptor gene is described in Example 3 of the specification. Claim 22 has also been amended to recite a function of the ICYP receptor, that is described at page 7, line 11 of the specification and is supported throughout the specification in the context of exhibitions of the effects, both positive and negative, that various agents known to interact with membrane receptors such as andrenergic, serotonin and dopamine receptors have on the claimed polypeptide with respect to eosinophil chemotaxis. The claimed polypeptide is disclosed as being a receptor that has a signal transduction function (see page 2, lines 17-20 of the specification). The concept of receptors interacting with ligands in a manner that has both a positive and negative effect on a signal transduction function, in this case eosinophil chemotaxis, is commonly referred to and well recognized by the skilled artisan as "mediation." Thus, the last phrase of amended claim 22 is definite and readily apparent to the skilled artisan from the totality of the information provided in the disclosure. As amended the claims are limited to proteins that possess the functional characteristics of ICYP binding and mediation of the inhibition of eosinophil chemotaxis. No prohibited new matter has been added by way of these amendments.

III. Requirement with respect to the Drawings

Copies of original drawings with respect to Figures 1-18, 21 and 25 as well as corrected drawings for Figures 19 and 22-24 are submitted herewith in light of the indication in the Advisory Action that "The Drawings provided on 06/25/04 were not a complete set. There is no complete set of Drawings in the file." Applicants point out that the Final rejection only refers to the corrected drawings filed by Applicant on July 23, 2003 that were indicated has having been separated from the file. Thus on June 25, 2004 the corrected drawings for Figures 19 and 22-24 were again submitted. It now appears from the comments in the Advisory Action that all of the drawings have been separated from the file. In response to this comment Applicants submit a complete set of drawings in which Figures 1-18, 21 and 25 are original and drawings 19 and 22-24 are as previously corrected on July 23, 2003.

IV. Rejections Under 35 U.S.C. §112

Claims 22, 25, 29, 33, 34, 36, 37, 47 and 48 were rejected under 35 U.S.C. §112, first paragraph, because the specification, while being enabled for polynucleotides encoding a protein of SEQ ID No. 14 and the portion thereof capable of binding ICYP, allegedly fails to enable other polynucleotides. Essentially, the Examiner has responded to our previous arguments filed July 24, 2003, by asserting that the claims encompass variants other than the natural variants discussed in the previous response. The Examiner further argues that the application does not provide an enabling disclosure for

polypeptides that need only have the 15 or 16 amino acids recited in SEQ ID Nos. 5 and 6. Applicants respectfully traverse the rejection.

At the outset, Applicants note that claim 22 has been amended above to include only polypeptides encoded by the recited nucleic acid sequences and sequences that hybridize thereto under highly stringent conditions. Further, a protein according to the claimed invention must have the recited functional characteristic, *i.e.*, be able to mediate the inhibition of eosinophil chemotaxis. Thus, the claims as amended do not read on an infinite number of polypeptides, as asserted in the Office Action (p. 6).

Moreover, given the state of the art of molecular genetics at the time the application was filed, the skilled artisan could readily create directed or random mutations in the disclosed sequences using standard genetic techniques, and screen the resulting proteins for the functional attributes recited in the claims without undue experimentation. Accordingly, the claims are not limited to only natural variants that may be isolated from other mammalian species, but also include sequence variants that demonstrate the claimed functional characteristics.

With regard to natural species variants, the Examiner asserts that Applicant suggests that enablement is provided by waiting for someone else to clone the sequences and then to use the instantly disclosed sequences to find them in a database. Applicants respectfully note that the tBLASTn search results presented in the declaration of Toshinari Sugasawa were presented to show the high level of homology of the claimed protein across species in the region of SEQ ID Nos. 5 and 6, and not as an assertion that the full length sequences could simply be isolated from the database. Indeed, as stated in paragraph 5 of the declaration, given this high level of homology, "clones corresponding

to the identified sequences could be readily isolated by one of skill in the art using the methodology outlined in Example 3."

In Example 3, Applicants describe how a human expressed sequence tag with almost 100% homology with SEQ ID No. 6 was identified in a partial cDNA clone in the EMBL database, and was in turn obtained and used to isolate the full length human sequence from a human skeletal muscle cDNA library. Those of skill in the art would understand, however, that a partial cDNA clone picked from the public database is not necessary for isolating the full length clone from a cDNA library as described. Rather, given the showing in the Sugasawa declaration that the region represented by SEQ ID Nos. 5 and 6 exhibits such a high level of homology across species, it would be clear to the skilled artisan that a probe corresponding to SEQ ID No. 5 or 6 could be used to isolate at least a partial clone from any species of mammalian cDNA library, which in turn could be used to screen other clones until the full length sequence of the protein is obtained. These are standard genetic techniques that were well known and widely used at the time the application was filed, which would not require undue experimentation to implement.

In view of the amendments and remarks presented above, reconsideration and withdrawal of the enablement rejection under 35 U.S.C. §112, first paragraph, are respectfully requested.

Claims 22, 25, 29, 33, 34, 36, 37, 47 and 48 were also rejected under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter that was not described in the specification so as to reasonably convey that the inventors, at the time the application was filed, had possession of the claimed invention. Essentially, the Examiner has responded

to our arguments previously submitted on July 24, 2003 by citing the recent Federal Circuit decision of *Noelle v. Lederman*, which the Examiner believes has a fact pattern resembling the instant fact pattern (see page 8 of the Office Action). According to the Office Action, the party Noelle had only described a murine protein and antibody, but was claiming a human antibody that bound to the human homolog of the murine protein. The court determined that simply disclosing the murine protein did not put Noelle in possession of the human protein.

Applicants respectfully submit that the facts of the instant application are not comparable to the facts of *Noelle v. Lederman*. First, as discussed in the Office Action, Noelle was specifically claiming a human antibody after only disclosing a murine antibody. In contrast, Applicants are claiming a genus of mammalian proteins, having specifically disclosed two examples of such proteins in the specification (*i.e.*, from rat, in Example 1, and human, in Example 3). Applicants are not specifically claiming a species of protein that is not described in the application.

Second, although Noelle was also denied a genus claim based on the disclosure of the murine antibody, the present specification discloses two species of protein within the claimed genus and provides a full characterization of the functional attributes of the claimed genus (*i.e.*, see Example 2 of the specification). Further, Applicants have provided evidence of a high level of homology across species in the declaration of Sugasawa, submitted July 24, 2003. This is in contrast to the facts of *Noelle v. Lederman*, where the court held that party Noelle had only described a single antibody species, and had not provided evidence of predictability across species (see *Noelle v. Lederman*, p. 1514). Applicants have not re-submitted a copy of the *Noelle v. Lederman*

decision that was attached to the June 25, 2004 amendment filing in order to avoid duplicate entries of the same documents in the application file.

The Examiner further asserts that *Noelle v. Lederman* stands for the premise that a description of the DNA itself is required for adequate description of DNA (see page 9 of Office Action). Applicants respectfully disagree. Rather, the *Noelle* court acknowledges the statement in *Vas-Cath Inc. v. Mahurkar* that each case involving the issue of written description "must be decided on its own facts. Thus, the precedential value of cases in this area is extremely limited." (see *Noelle v. Lederman*, p. 1513).

The *Noelle* court further acknowledges the statement in *Enzo Biochem v. Gen-Probe, Inc.* that "the written description requirement would be met [by disclosure of a] functional characteristic coupled with a disclosed correlation between that function and a structure." (*Id.*). This led the *Noelle* court to conclude that the party Noelle could have claimed the human antibody had they fully characterized the human antigen to which it binds (p. 1514). They certainly did not hold that a description of the antibody itself is required for adequate written description, and did not endorse the implication now stressed by the Examiner, *i.e.*, that a DNA must be described by its sequence to provide an adequate description. Again, as stressed in our previous amendment, the Written Description Guidelines promulgated by the Office state that "[t]here is no basis for a *per se* rule requiring disclosure of complete DNA sequences or limiting the claims to only the sequence disclosed." *See, e.g.*, the Guidelines, p. 1101, col. 3, first paragraph ("There is no basis for a *per se* rule requiring disclosure of complete DNA sequences or limiting claims to only the sequence disclosed).

In any case, Applicants respectfully stress that claim 22 has been amended above to include only polypeptides encoded by the recited nucleic acid sequences and sequences that hybridize thereto under highly stringent conditions. Thus, amended claim 22 is similar to the claim at issue in Example 9 of the Revised Interim Written Description Guidelines Training Materials (hereinafter "Training Materials"). A copy of the Guidelines has not been re-submitted to avoid duplication of documents in the file.

In Example 9 of the Training Materials, the specification discloses a single cDNA sequence of a receptor binding protein, and includes an example where the sequence is used under highly stringent conditions for the isolation of nucleic acids encoding functionally variants. The claim at issue in Example 9 is directed to isolated nucleic acids that hybridize to the specific sequence under highly stringent conditions, and that encode proteins with the recited function. According to the Office's analysis (see pp. 36-7 of the Training Materials)

> [A] person of skill in the art would not expect substantial variation among species encompassed within the scope of the claims because the highly stringent hybridization conditions set forth in the claim yield structurally similar DNAs. Thus, a representative number of species is disclosed, since highly stringent hybridization conditions in combination with the coding function of DNA and the level of skill and knowledge in the art are adequate to determine that Applicant was in possession of the claimed invention.

Thus, given that claim 22 is of a similar type as the claim at issue in Example 9 of the Training Materials and that the specification contains description that is equivalent to the specification at issue in Example 9 of the Training Materials, Applicants respectfully submit that claim 22 as amended above is adequately described by the specification.

Reconsideration and withdrawal of the written description rejection under §112, first paragraph, are respectfully requested.

This reply is fully responsive to the Final Office Action dated April 6, 2004. Therefore, a Notice of Allowance is next in order and is respectfully requested.

Except for issue fees payable under 37 CFR §1.18, the commissioner is hereby authorized by this paper to charge any additional fees during the pendency of this application including fees due under 37 CFR §1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 CFR §1.136(a)(3).

If the Examiner has any further questions relating to this Amendment or to the application in general, he is respectfully requested to contact the undersigned by telephone so that allowance of the present application may be expedited.

Respectfully submitted,

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